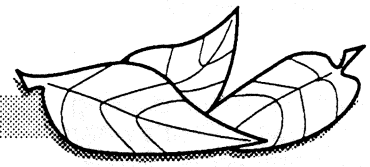
Grade 5

Forest Wildlife and Recreation



Objectives

- Students will become familiar with the interdependence of forests and wildlife, and the kinds of wildlife in Utah forests.
- Students will become aware of the beauty and the recreational contributions forests make to Utah.

Vocabulary Words

predators
vegetation
cover
species
habitat
wetlands
clearcutting
controlled or prescribed burning
conifers
hardwoods
aesthetics
recreation
forest regions

Background Information

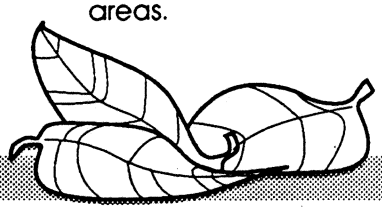
There's a close relationship among soil, water, plants, and wildlife. Each depends on all the others. **Predators** take care of surpluses of other animals. Deer, rabbits, and others eat certain plants. Birds and squirrels distribute the seeds of plants so they will reproduce. Water gives life to all.

But people can, and do, change or alter the environment. Through carelessness, not knowing the facts, or simply putting their own wants and desires before nature's needs, people disturb or destroy soil, water, and **vegetation**. This in turn destroys wildlife.

Forests provide food, **cover** (protection), and nesting places for wildlife. The number of wildlife and the variety of wildlife **species** in an area depends on the number and variety of plants (flowers, weeds, vines, shrubs, and trees) in the area. No two species of wildlife have exactly the same needs.

Wildlife Habitat

A wildlife **habitat** is a place or area where wildlife live - where they feed, nest, hide, and play. Habitat includes both land and water areas.



Each species of wildlife has its own habitat requirements. Most species need a variety of plants. Pheasants and quail like to feed in the farmer's corn and grain fields and return to the forest borders near the farm crops to rest, nest, and hide. Fox venture out into these fields and meadows to catch the unwary quail, pheasants, rabbits, or field mice and then return to their dens in the forest. Hawks soar over these same fields for the same food and return to their nests in the forest. The coyote might be seen ready to pounce on a rodent while its competitor, the badger, does the digging that chases the rodent out.

The wood duck feeds in water and returns to its home in a hollow forest tree. The greater the variety of vegetation and water areas, the greater the variety of wildlife species.

Swamp or marsh areas (**wetlands**) are necessary habitats for moose, muskrats, beavers, geese, ducks, and many songbirds. Draining wetlands destroys the habitat for these wildlife species. Because these areas are water holding areas, draining them can also result in floods downstream.

Forests located upstream from marshy areas hold back some of the water from rainfall and snow melt so the marshes do not overflow. The

water that does reach the marsh is clean, clear water. If it were not for the forests, this water would pick up soil particles along the way and gradually the soil would build up in the marsh. Then it would hold less water, and that water would be muddy. Forests are very important in maintaining a habitat for wetland wildlife.

Wildlife Food

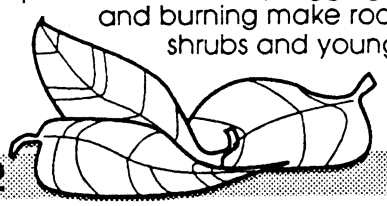
The greatest variety of wildlife is found along the shrubby edges of forest growth. That's where the greatest variety of food plants grow. Some species of wildlife such as quail, pheasants, and sharptail grouse prefer to feed near forest edges. These edges are found along the outside forest borders, beside roads or logging roads, along vegetation on stream banks, and in farmstead shelterbelts.

Snowshoe and cottontail rabbits feed on bark and twigs of shrubs and small trees. Porcupine feed on bark of valuable forest trees, while beaver feed on the bark of the less valuable aspen, willow, and birch.

Bears, raccoons, and many songbirds eat the berry-type fruits of wild plants such as strawberry, raspberry, blackberry, high-bush cranberry, blueberry, cherry, and hawthorn. The ruffed grouse eats these berries as well as wild strawberry leaves, wintergreen, and rose hips. During the winter, ruffed grouse eat buds and catkins of birch, willow, and aspen.

Deer prefer leaves and young twigs of bitter brush, Utah juniper, red osier dogwood, and sagebrush. They also eat big tooth maple, box elder, cottonwood, pinyon pine, willow, and aspen. When these plants are scarce during the winter months, deer will feed on grasses, tamerisk, alder, and pine. They will starve, however, if this is the only food available. Deer need browse plants. Their digestive systems are different from cattle; they would starve on a diet of hay.

The forester can help the deer by **clearcutting** forest areas or by **controlled** or **prescribed burning**. Clearcutting removes the older, larger trees, whose branches are out of reach for deer. Burning removes dead trees, older brush, and tree parts left behind by logging. Both cutting and burning make room for the new shrubs and young trees that provide food for deer. The next time you see a clearcut or control-burned forest area, do not automatically think it is a poor forest practice because it is unsightly. Remember, clearcutting or control burning (1) creates the best conditions for growing new tree species as lodgepole pine and aspen; (2) makes more forest edges, which are preferred by a variety of wildlife; and (3) provides food for deer.



Wildlife Cover

Wildlife will seek cover for (1) a place to hide; (2) shelter or protection from storms and wind; (3) shade on hot sunny days; (4) a place to nest or rest; (5) privacy during their mating seasons; (6) a place to build their nests; and (7) a safe place where their young can play and learn how to protect themselves.

It makes sense...more variety of tree and other plant species means more variety of cover. Raccoons, squirrels, and wood ducks will use hollow trees for their homes. Grouse, pheasants, quail, and rabbits use brush piles of tree branches, low shrubs, or tangled grapevines to hide and build their nests. Songbirds build their nests in dense trees or shrubs. Most of this cover is found along the forest borders where tree branches grow near the ground.

Trees and shrubs in a farmstead windbreak or a field shelterbelt also give excellent cover. They are animal roadways too, making protected travel lanes for game birds, songbirds, fox, rabbits, deer, and skunks. Good cover is important to smaller animals because their enemies live in the same animal community.

The forest is also home for predators such as hawks, owls, fox, and wolves that feed on smaller animals.

Scavengers such as vultures and crows also live in the forests. They have a special role. They help keep the forests clean by clearing away and feeding on dead forest animals.

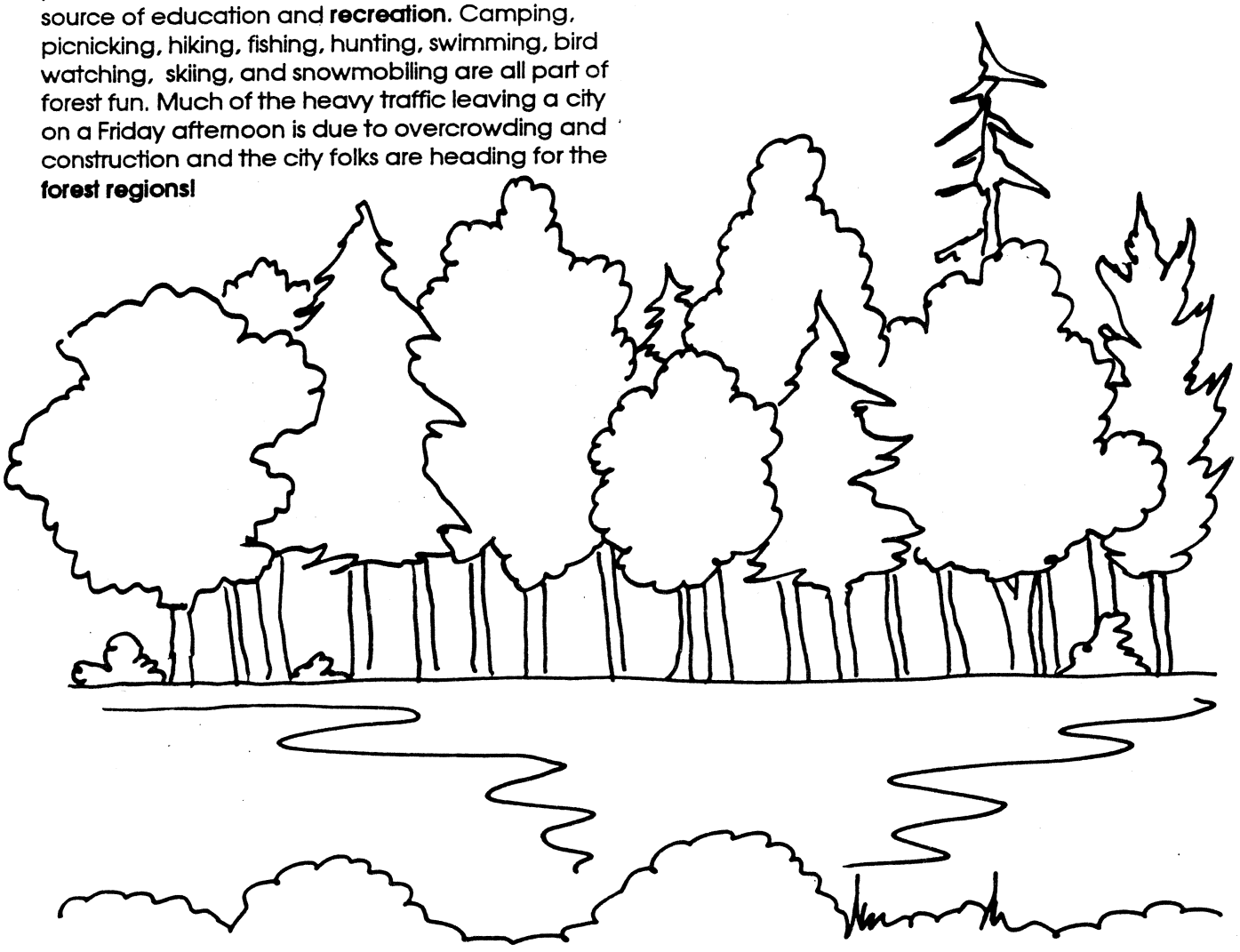
Are all trees good for cover? Not really. In general, **conifers** provide good shelter and some food while **hardwoods** provide good food and some shelter. A forest that has a mixture of conifers and hardwoods is ideal for wildlife. Forests are different in types of soil, topography, climate, and plant species. Different types of

forest communities provide habitat for different species of wildlife.

Forest Aesthetics and Recreation

Throughout the ages, poets, writers, and painters have praised the forest as a place of great beauty. Trees have given strength and a sense of peace to people in all walks of life. Forest **aesthetics** — the beauty of the forest and the plant and animal life in the forest — are enjoyed by youngsters and adults alike. The sight of a bounding deer along the edge of a forest, inspires awe and wonder in almost everyone.

Since the forest is a place of beauty and peace, it is only natural that it also is a great source of education and **recreation**. Camping, picnicking, hiking, fishing, hunting, swimming, bird watching, skiing, and snowmobiling are all part of forest fun. Much of the heavy traffic leaving a city on a Friday afternoon is due to overcrowding and construction and the city folks are heading for the **forest regions!**



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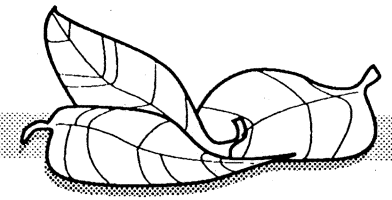
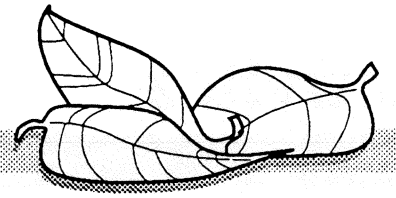


See activity details on pages 5-6 through 5-11.

Calendar

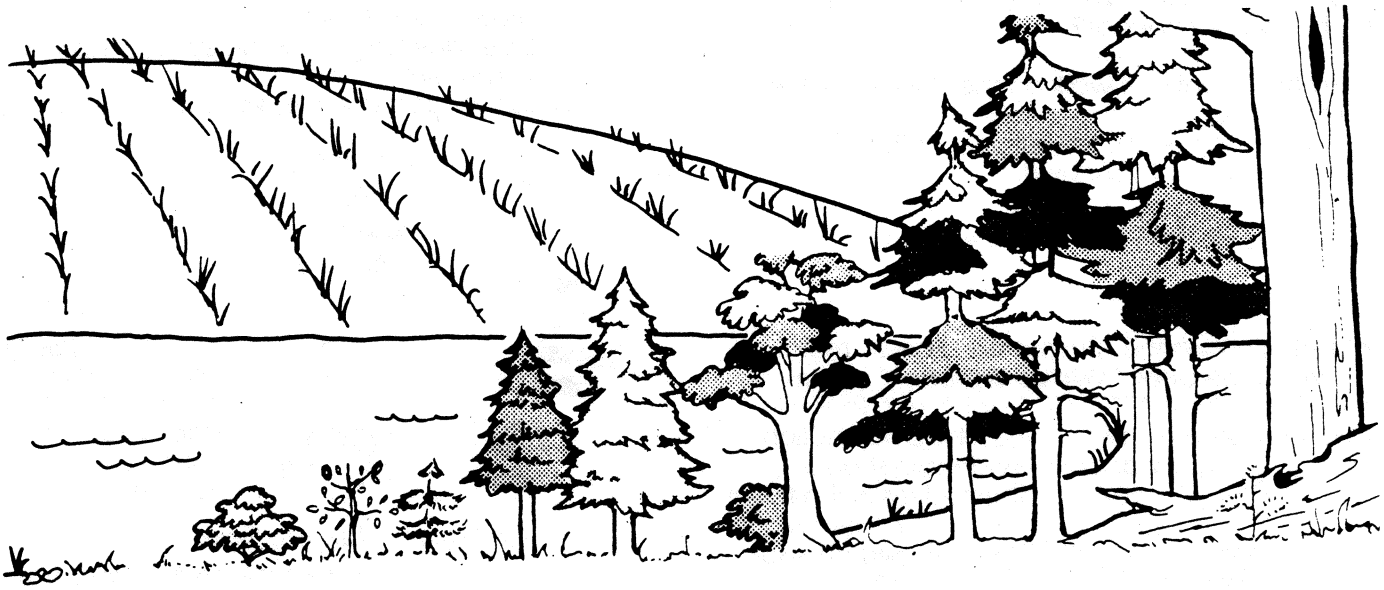
1 Discuss: Stages of the forest. Which animals live in certain parts of the forest? Science	**2** Look for: The "green tinge" in the tree canopy. Build: Start your "Stages of the Forest" bulletin board. Science/Art	**3** Discuss: Where does each animal of the forest nest and feed? Build: Place animals on the bulletin board. Science/Art	**4** Build: Continue work on "Stages of the Forest" mural. *Fun Fact:* Since 1947, Utah has planted over 9,000,000 trees grown from seedlings at the State Tree Nurseries. Science/Art	**5** Build: Finish "Stages of the Forest" mural. Read: *"Wildlife Watcher"* by Jim Arnosky. Science/Language Arts
6 Look for: Crab apples in bloom. Do: Crossword puzzle: *Tree-mendous* (Activity Sheet). Science	**7** Discover: The squirrel-nut-tree relationship! Do: Students bring acorns to school. Science	**8** Discover: Acorn inhabitants. *Fun Fact:* With the exception of cities located near rivers and streams, all urban trees have been planted by people in Utah. Math	**9** Read: Magazine article "Life in a Nutshell." (National Geographic, June 1989) Science/Language Arts	**10** Discuss: List facts in Activity 9. *Fun Fact:* There are more than 600 species of oaks! Science/Math
11 Hike: Collect things to create springtime landscapes. Art	**12** Look for: Leaves forming on big tooth maples and Gambel oak trees. Create: Springtime landscapes. Science/Art	**13** Look for: Dandelions. Create: Springtime landscapes. Science/Art	**14** Write: Haiku or cinquain poems about your springtime landscape. Language Arts	**15** Look for: Lilac bushes and apple trees in bloom. Read: Share your poems from Activity 14. Science/Language Arts
16 Look for: Bees pollinating. Discuss: Forest recreation. Science/Social Studies	**17** Look for: Falling silver maple and elm seeds. Science	**18** Look for: Bridal wreath blooming. Discover: Trees - living works of art. Science/Math	**19** Read: *"Little Raccoon"* by Suzanne Noguere, or "Trees" poem by Joyce Kilmer. Science/Language Arts	**20** Look for: Monarch butterflies. Science

Bulletin Board Idea



Stages of a Forest

Students participate by drawing and painting the stages of a forest. Include an oat field and water as part of the background scenery. After the painting is finished, students draw and paint animals to fit in the scene in the appropriate places on the mural. Make them removable so students can take them off and put them back on again. Some animals may appear in more than one place. Example: Pheasants feed in meadows or cornfields and nest in brush in woods. Hints for a happy fit: Talk about proportion and relative sizes of animals *before* starting this part of the mural.



Activites

Hands On - Minds On Activities

Follow these activities in order and you have one for each of the 20 days in Arbor Month (see calendar). Or, pick and choose any of the activities that best meet your class's needs.

To complete the calendar activities during the month, collect or ask youngsters to bring in the following: "wildlife" magazines that can be cut apart for pictures; a large jar; acorns; "*Wildlife Watcher*" by Jim Arnosky; National Geographic magazine, June 1989; Cricket magazine, May 1988; art books; "*The Little Raccoon*" by Suzanne Noguere or the poem "Trees" by Joyce Kilmer.

Activity 1: Stages of the forest.

Discuss: Which animals live in each" stage" of the forest? Ask students to bring "wildlife" magazines to school that can be cut apart. Some titles to suggest are Field and Stream, Outdoor Life, National Wildlife, Ranger Rick.

Activity 2: Look for: The "green tinge" in the tree canopy.

Students put white backing paper on the bulletin board and start to work on the mural. Animals to be researched and drawn in proportion to one another might be: skunks, woodpeckers, pheasants, quail, fox, rabbits, hawks, coyotes, wood ducks, geese, muskrats, deer, song birds, raccoons, squirrels.

Activity 3: Discuss: Forest homes.

Where does each animal of the forest nest and feed? Place each animal in a proper place to show its habitat. Why does the animal need that particular habitat?

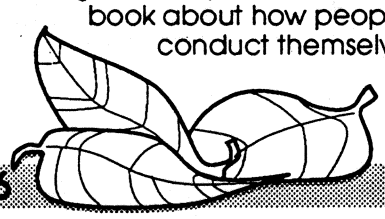
Activity 4: Continue work on the "Stages of the Forest" mural.

Add additional animals from Activity 2 or research more of your own.

Fun Fact: **Utah has 44 State Parks.**

Activity 5: Finish the "Stages of a Forest" mural.

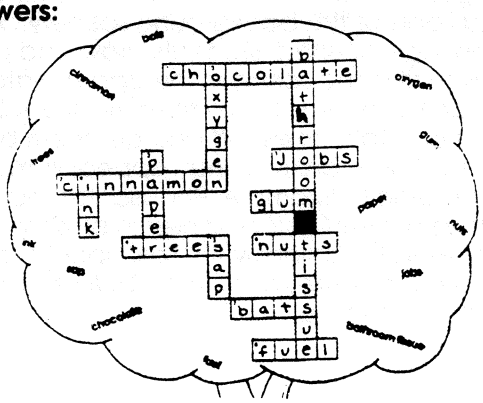
Read the book "*Wildlife Watcher,*" by Jim Arnosky, Lothrop 1983. This book is also found in Cricket magazine, Sept. 1985. It is a non-fiction book about how people should conduct themselves in the forest if they wish to watch wildlife.



Activity 6: Look for: Crab apple trees in bloom.

Do the crossword puzzle - *Tree-Mendous* - Activity Sheet A (Page 5-10).

Answers:



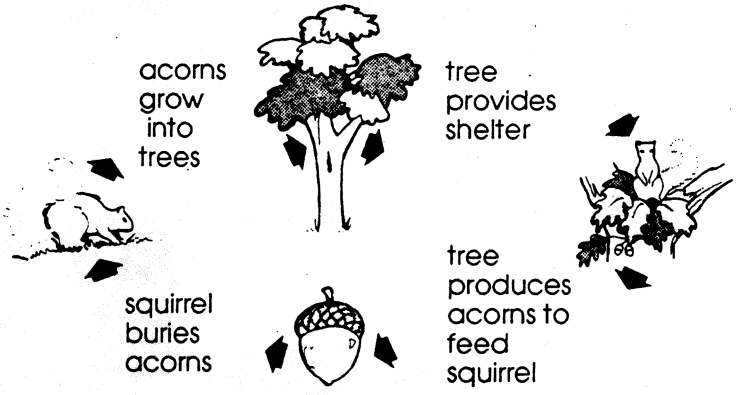
Ask students to bring acorns to school from their yards, parks, and the school yard. At this time of the year, suggest looking under oak trees where there are still many leaves on the ground. Look for acorns that have fallen on top of the leaves. These will probably be whole and not partially decomposed. Provide a large jar for the students to put acorns in.

Activity 7: Forest relationships

Draw the squirrel-nut-tree relationship cycle on the board, or reproduce it for each student. Discuss what this diagram means. Ask the following questions; encourage students to ask questions, too!

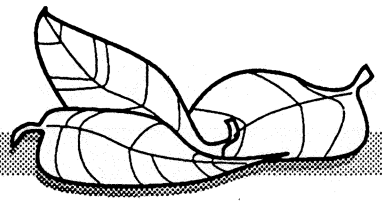
a. Does every acorn grow into an oak tree? How do you know?
b. What happens to the acorns that do not grow into oak trees?
c. Does anything live in an acorn? How do you know?

List all the facts students know about acorns.



The Squirrel-Nut-Tree Relationship

U.S. Department of Agriculture Forest Service.



Activity 8: Examine acorns students have brought to school.

Are the acorns different in any way? Are there any holes in the shells? What might this mean?

Give each student one acorn. Have him/her crack open the acorn; warn not to crush it. Each student then carefully examines the inside of his/her acorn. Is there anything in the acorn besides the nut? Count the number of acorns that have something else inside. What is the percent of inhabited acorns compared to the total number of acorns examined?

Estimate how many acorns are left in the classroom jar. Record each person's estimate, then have one or two people count the acorns in the jar. Have students guess the number of those acorns they think might have inhabitants. Ask volunteers to explain how they arrived at their calculation. If no one has done so after several explanations have been given, offer the mathematical way to calculate percentages (based on your earlier findings). To check your estimation accuracy, examine all the acorns. If there are live critters in any of the acorns, you might want to save that acorn and see if the critter develops.

Activity 9: Life in a Nutshell.

Share the magazine article "Life in a Nutshell," National Geographic, June 1989. On a large sheet of paper attached to a bulletin board, have students write the facts they learned about acorns and acorn inhabitants from the article. This sheet might be titled "Life in a Nutshell."

Activity 10: Read some of the facts that have been written on yesterday's sheet and discuss.

*Fun Fact:*There are more than 600 species of oaks, all of which grow naturally only in the Northern Hemisphere.

Activity 11: Take a hike!

Collect nature things for a springtime landscape. (See Activity 12.) Encourage each person to include at least one tree part.

Be sure everyone understands that cutting buds, leaves, and branches off trees or picking blooming tulips and certain other flowers is not acceptable.

Activity 12: Look for: Leaves forming on big tooth maple and Gambel oak trees.

Create springtime landscapes. Using the "natural treasures" collected on your hike, combine illustration, design, and bits of nature to create scenes of springtime. Consider dioramas, or three-sided scenes constructed in boxes, too. Natural elements to choose from include stones and pebbles, twigs, bark, leaves, catkins, pine cones, nuts.

Activity 13: Look for: Dandelions.

Work on springtime landscapes.

Activity 14: Write haiku or cinquain (five stanza) poems about your springtime landscape. If you can get it, Cricket magazine, May 1988 has information.

Activity 15: Look for: Lilac bushes and apple trees blooming.

Share poems from Activity 14.

Activity 16: Look for: Bees pollinating.

As a group, list as many recreational activities as students can think of that take place outdoors. From cut-up copies of magazines, have students find as many outdoor recreation pictures as possible. Set the guideline beforehand that any picture selected must include at least one tree. Make a recreation collage on a large piece of paper or a poster board to display the pictures. How many of the students have done each of the recreational activities themselves? Which are group favorites? Share tales of adventures in forest recreation!

Activity 17: Look for: Silver maple and elm tree seeds falling.

Activity 18: Look for: Bridal wreath blooming.

Check out any art gallery and art books where you're sure to see lots of landscape and scenic art. What do you see as a main feature of beauty in many of the scenes? Trees, of course! Why do you think artists and photographers find trees such interesting objects? How do trees make you feel when you're looking at them in real life? In a painting or photograph? How can they set a mood for us?

Activity 19: Read the book *"Little Raccoon,"* by Suzanne Noguere or the poem "Trees" by Joyce Kilmer.

Activity 20: Look for: Monarch butterflies.

More Activity Fun

We All Need Forests

What would you do if you were in charge of 20,000 acres (8000 ha) of forest? If you owned a paper company, you would probably plant a species of fast-growing pine or other "paper tree" and manage as much of the forest as you could for pulpwood. If you were a wildlife biologist, you would try to manage the forest in a way that would keep the best habitat for the different species of wildlife you wanted to protect. And if you were a recreation planner, you might manage the forest to provide good campsites, hiking trails, ski paths, fishing streams, bike paths, and wildlife study areas.

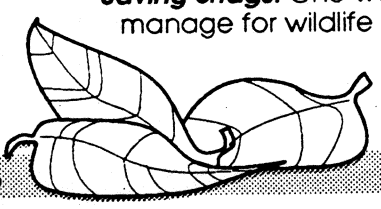
Although many people don't realize it, most of the forests in this country are managed. How a forest is managed depends on what it will be used for. In the past, most forests were managed for only one type of use, such as for raising pulpwood trees. But today, many more are being managed for several different uses at a time.

In this activity, you will get a chance to discuss different forest uses and how some of these uses compete. You'll also learn why managing for different uses is so important.

Ask your students to name ways they or their families use forests. (For hiking, birding, hunting, fishing, camping, and so on.) List the uses on the chalkboard or a large sheet of easel paper. Then explain that forests are also important because they provide habitat for many types of wildlife and contain important natural resources. Next ask if someone can tell you what the word *manage* means. Explain that in order for people to use forests in different ways, forest managers must manage forests in different ways.

Next pass out Activity Sheet B (Page 5-11). This page lists some of the things that many forests are managed for. Ask students to look at the three rows on the page. Starting with the first row, labeled **"wildlife,"** discuss some of the ways forests are managed to help protect different species of wildlife. Use this background information to explain how forests are managed for wildlife:

Saving Snags: One way people manage for wildlife in a forest is by leaving dead trees, or snags, standing instead of cutting them down. Snags provide nesting cavities for many birds and mammals, such as owls, woodpeckers, wood ducks, bluebirds, raccoons, and squirrels.



Building Brushpiles: By building brushpiles in a forest and along forest edges, forest managers help provide hiding and nesting sites for many animals that live on the ground, such as foxes, rabbits, wood thrushes, and chipmunks.

Letting Logs Lie: Many types of animals use logs for nesting and hiding places. By not removing logs, managers can help provide homes and feeding areas for many kinds of wildlife.

Building Feeders and Nesting Boxes: Putting up nesting boxes in forests that have limited nesting sites can help attract wildlife. So can setting up feeding stations for birds and mammals.

Burning: For some species, the only way to maintain the right kind of habitat is to burn the area on a regular basis to get rid of undergrowth.

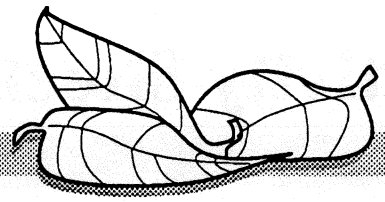
Picking the Right Plants: By planting certain types of trees and shrubs in a forest area, wildlife managers can provide habitat for specific types of wildlife.

Now have the students look at the row labeled **"recreation."** Compare this list with the list the children came up with. Discuss the fact that the forest is an important place for people to relax, enjoy nature, and exercise.

Explain that some of the ways people use forests for recreation compete with the needs of wildlife and can also disrupt the plants that grow there. For example, to build ski slopes in a forest, heavy equipment must come in and cut down trees to make the runs. Roads and parking lots must be built so that people can get to the slopes and park. Many times ski lodges and other facilities are also built.

Ask students to think of other ways recreational uses of the forest can harm the wildlife. The role of many forest managers is to balance the uses of a forest so that wildlife can be protected and people can use it for recreation, too.

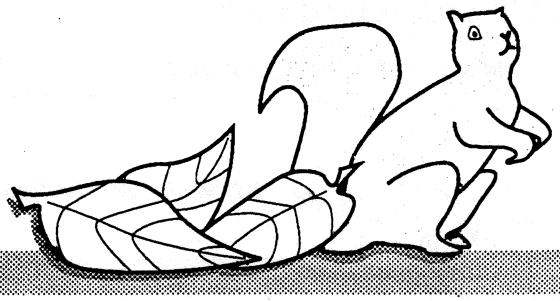
Finally, have students look at the row labeled **"products."** Many forests are used for commer-



cial purposes. Some forest areas are managed for lumber, some are managed for pulpwood, and some are opened up for oil, gas, and mineral uses. These uses can upset the forest community and compete with wildlife and recreational uses. For example, you probably wouldn't want to camp near a strip mine in a forest or hike along an area that is being lumbered. Why is it important to have commercial uses in a forest? (People need forest products.)

Adapted from Ranger Rick's Naturescope "Trees are Terrific." Used with permission.

If you haven't already made a group collage in Activity 16, invite individual students to make forest collages showing all the different uses of a forest. They can cut pictures from magazines, draw their own pictures, and tape or glue on pieces of real forest items, such as toothpicks, paper, seeds, and roots. Have each person write a short paragraph explaining his or her collage, then hang the collages around the room.

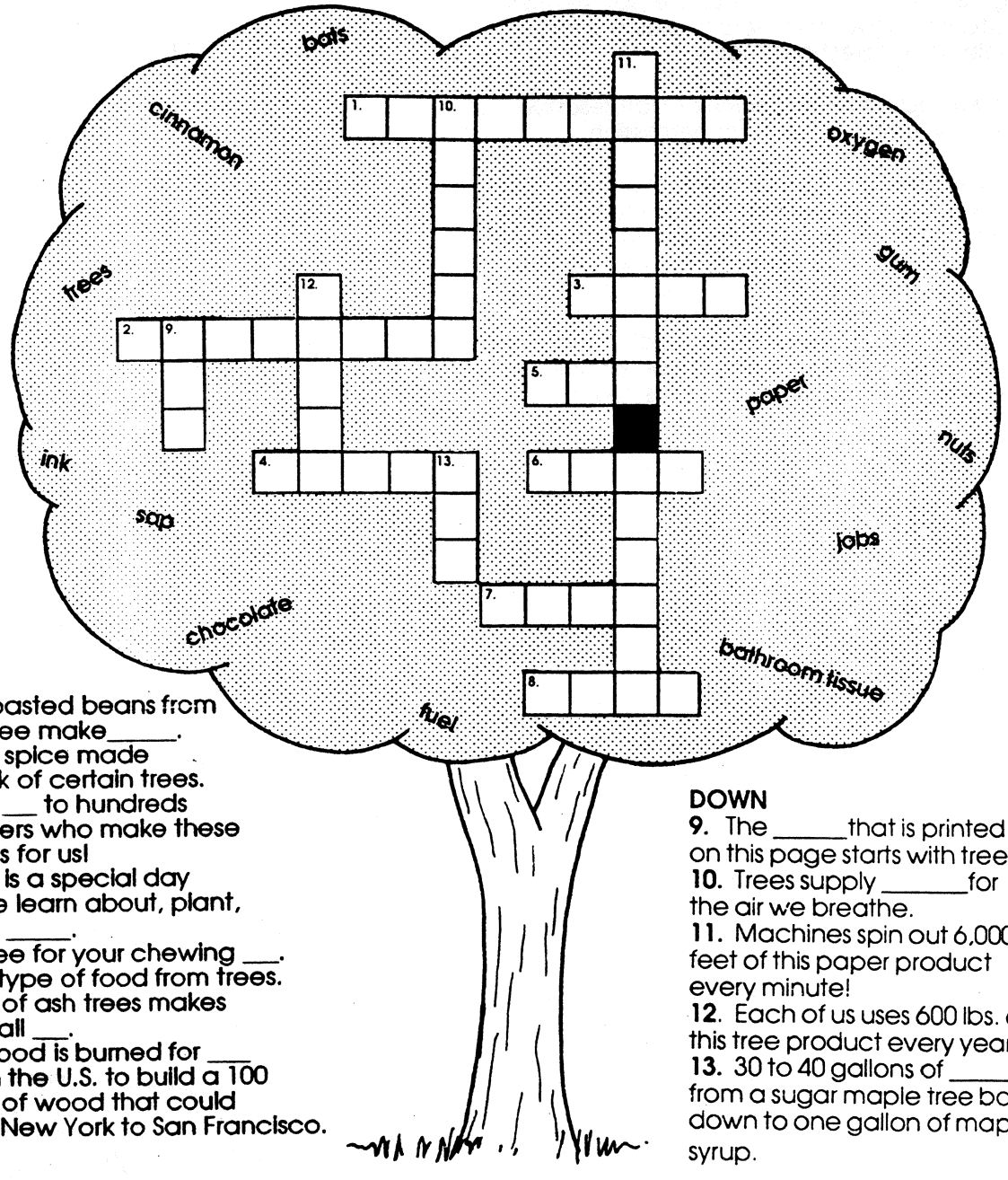


Activity Sheet A

Tree-Mendous

Tree (tre)n. A woody plant that is at least 20 feet tall when fully grown; trees grow taller, live longer, and become more massive than any other living thing; trees grow in many sizes and shapes; they serve us many ways.

You'll think trees are tree-mendous when you see some of the things they give us! Use these words to fill in the "crosswood puzzle"...then you just might want to pat a tree on the bark!



ACROSS

1. Ground, roasted beans from the cocoa tree make_____.
2. _____ is a spice made from the bark of certain trees.
3. Trees give ___ to hundreds of Utah workers who make these tree products for us!
4. Arbor Day is a special day when people learn about, plant, and care for _____.
5. Thank a tree for your chewing ___.
6. ___ are a type of food from trees.
7. The wood of ash trees makes great baseball ___.
8. Enough wood is burned for ___ each year in the U.S. to build a 100 foot tall wall of wood that could stretch from New York to San Francisco.

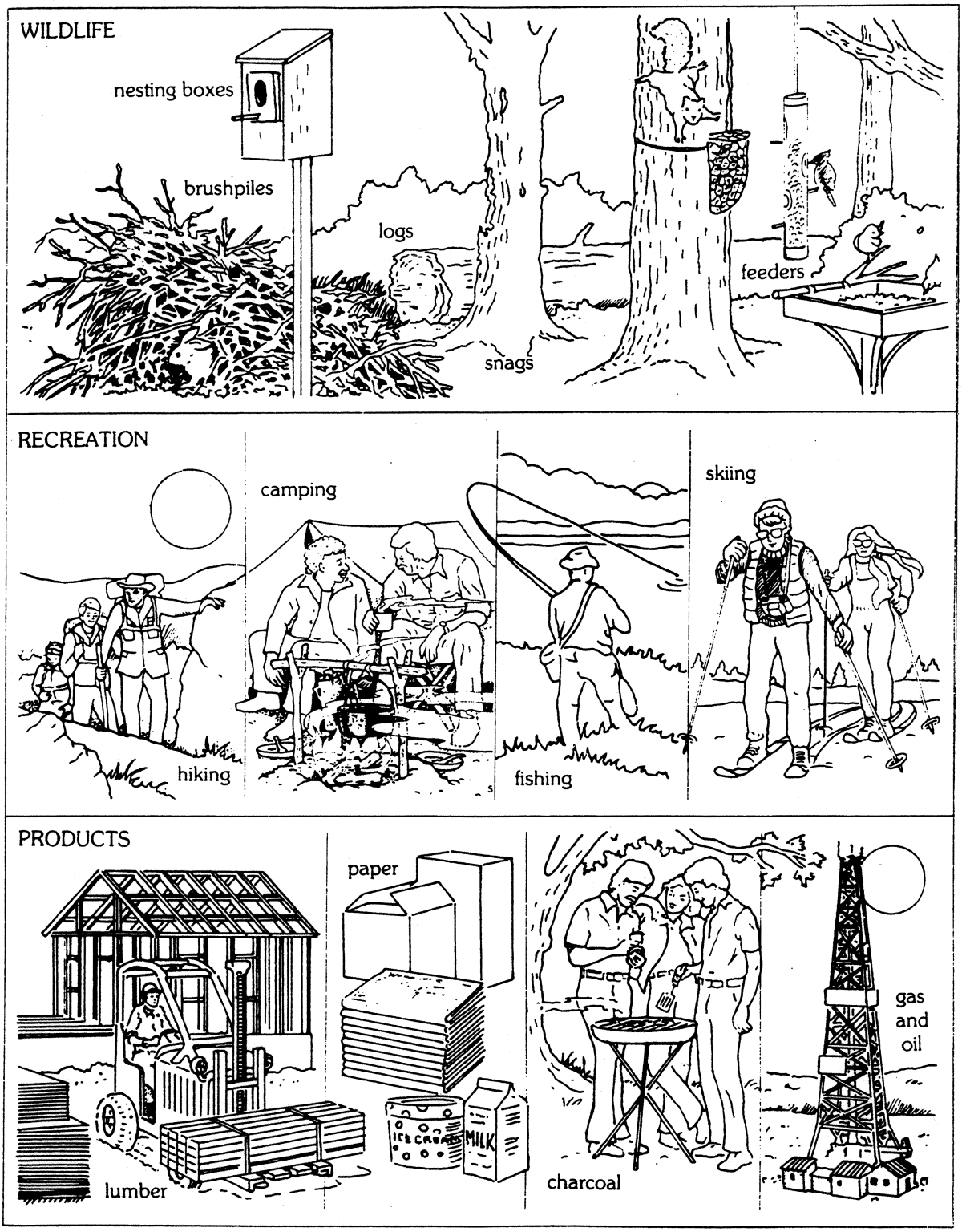
DOWN

9. The _____that is printed on this page starts with trees.
10. Trees supply _____for the air we breathe.
11. Machines spin out 6,000 feet of this paper product every minute!
12. Each of us uses 600 lbs. of this tree product every year.
13. 30 to 40 gallons of _____ from a sugar maple tree boil down to one gallon of maple syrup.

Answers: See Activity 6, page 5-6.

Activity Sheet B CopycatPage

We All Need Forests



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